

**Office Action Summary**

Application No.

08/959748

Applicant(s)

Clemmer et al.

Examiner

Alton Pryor

Group Art Unit

1209

---The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address---

**Period for Response**

A SHORTENED STATUTORY PERIOD FOR RESPONSE IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a response be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for response is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to respond within the set or extended period for response will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

**Status**

- ☒ Responsive to communication(s) filed on 10/28/97
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

**Disposition of Claims**

- ☒ Claim(s) 1-18 is/are pending in the application.
- Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- ☒ Claim(s) 1-5 is/are allowed.
- ☒ Claim(s) 9, 18 is/are rejected.
- ☒ Claim(s) 6-8, 10-17 is/are objected to.
- ☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement.

**Application Papers**

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is approved disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119 (a)-(d)**

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been received.
- ☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_
- ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

\*Certified copies not received: \_\_\_\_\_

**Attachment(s)**

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s) \_\_\_\_\_ Interview Summary, PTO-413
- ☐ Notice of References Cited, PTO-892 Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948 Other \_\_\_\_\_

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**First Action on the Merits**

***Action Summary***

Claims 1-5 are pending. Claims 1-5 are allowed. Claims 9,18 are rejected. Claims 6-8,10-17 are objected. Problems with title and abstract are cited.

***Claim Objection under 37 CFR 1.75***

Claims 6-8,16 are objected to under 37 CFR 1.75© as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims have not been treated on the merits.

***Claim Objection under 35 U.S.C. 112***

Claims 10-15,17 objected to as being dependent upon a rejected base claim 9.

***Claim Rejection under 35 U.S.C. 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9,18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swamer et al. (USPN 3,258,500) in view Tsuda et al. (WO 9321140 A1). Swamer teaches the synthesis of difluoromethane of about the same scope as the instant claims. Swamer teaches that vaporized reactants, dichloromethane and HF, are converted to difluoromethane in the presence of preheated Cr<sub>2</sub>O<sub>3</sub> catalyst. See column 1 lines 11-16, lines 59-64, column 4 lines 50 and 51. He

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also teaches that fluorination reactions result in halogenated mixtures of the chlorinated hydrocarbon. See column 3 line 12, column 7 lines 2-8. Swamer does not teach an extensive purification of crude difluoromethane. Tsuda teaches the purification of difluoromethane of about the same scope as the instant claims except for acid scrubber/solid desiccant treatment followed by a third distillation step. Tsuda teaches the introduction of crude difluoromethane to a distillation column to separate product into a light and heavy component. The component containing difluoromethane is treated with alkali solution to remove acid matter. Tsuda teaches the use of distillation to separate crude difluoromethane into two layers (upper and lower liquid phases). The layer containing the product undergoes another distillation for further purification. Hence, one of ordinary skill in the art at the time the invention was made would purify difluoromethane using methods taught by Tsuda and would also employ acid scrubber/desiccant treatment follow by an additional distillation step if necessary.

There appears to be no reason for acid scrubber treatment followed by distillation unless excess caustic solution is used in the neutralization of the product. The neutralization of acid by base and vice versa is well known and could be repeated several times in an experiment to remove undesired base or acid. This is a common practice. Also, the use of desiccants for removing water from reaction products is well known and often practiced. A person of ordinary skill at the time the invention was made would employ these additional purification steps if necessary.

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*Allowable Subject Matter*

Claims 1-5 are allowable. The prior art does not teach claimed molar ratios in present invention.

*Telephonic Inquiry*

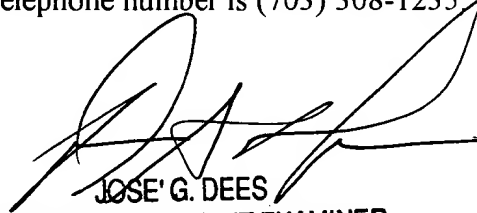
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alton Pryor whose telephone number is (703) 308-4691. The examiner can normally be reached on Monday through Friday from 8:00 a.m. to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jose Dees, can be reached on (703) 308-4628. The fax phone number for this Group is (703) 308-4556.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-1235.

ANP

2/5/98

  
JOSE G. DEES  
SUPERVISORY PATENT EXAMINER  
GROUP 1200